

ABSTRACT OF THE DISCLOSURE

A system and method for controlling toy vehicles has a plurality of pads coupled to a central station. Switches in the pads may be closed to select toy vehicles and the operation of motors for moving the vehicles forwardly, rearwardly, to the left and to the right and moving upwardly and downwardly a receptacle or bin for holding transportable elements (e.g. marbles). The pads may be set in a mode to allow sharing of a vehicle by more than one pad. The pads are connected by wires to the central station, and may be interrogated selectively, sequentially or simultaneously by the central station. The central station forms packets of signals representative of the switch closures of the interrogated pads, and transmits the packets over a modulated carrier frequency to receivers in the vehicles. Each of the packets includes a binary signal addressing the vehicle selected by the pad whose switch closures are represented by the packet of data. The central station prioritizes the transmission of the packets to improve vehicle control. An accessory, or a second central station, may be coupled to a smart port of the first central station. When the pads are interrogated by the central station, the signals from the pads may be routed to the accessory or second central station for processing, then sent back to the first central station for transmission to the vehicles. The pads include a flashback feature that automatically selects a previously selected vehicle. The motors of the vehicles may be energized using pulse width modulation to control the speed of the motor. Signals received by the vehicle are asserted to the motors in the first part of a duty cycle. The vehicles monitor all packets, and decode packets addressed to the vehicle to execute the commands represented by signals contained within the packet. When a packet is determined to be invalid, the vehicle ignores the packet.

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